

AMENDMENT UNDER 37 C.F.R. § 1.116
U.S. Application No. 10/727,567

Q78.637

REMARKS

Upon entry of the present Amendment, claims 1-5 and 7-8 are all the claims pending in the application. Claim 5 is amended to incorporate the limitations of claim 6. Further, claim 3 is cancelled without prejudice or disclaimer.

Initially, Applicant notes that entry of the present Amendment is not believed to raise new issues that would necessitate further consideration, as claim 5 is amended only to incorporate the subject matter of claim 6. Therefore, entry and consideration of the present Amendment is requested.

To summarize the Office Action, claim 5 stands rejected under 35 U.S.C. § 102(b) as being anticipated by Yamashita et al. (U.S. Patent No. 6,201,463, hereinafter "Yamashita"), and claim 5 also stands rejected under 35 U.S.C. § 102(b) as being anticipated by Grandmont et al. (U.S. Patent No. 5,949,321, hereinafter "Grandmont"). Further, claims 1, 3-4 and 6-8 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Grandmont in view of Hsu et al. (U.S. Patent No. 6,707,366, hereinafter "Hsu"), and claim 2 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Grandmont in view of Hsu, further in view of JP 2973514. The outstanding grounds of rejection are addressed below.

Claim Rejections - 35 U.S.C. § 103(a)

Independent claims 1 and 7 stand rejected under 35 U.S.C. § 103(a) as allegedly being anticipated by Grandmont in view of Hsu. Applicant respectfully traverses and submits that the Examiner has failed to establish *prima facie* obviousness.

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Claim 1 defines a transformer, comprising, *inter alia*, a coil portion having a plurality of windings, and a plurality of cores arranged to sandwich the coil portion in aligning directions of the windings, and further recites the features of each winding of the plurality of windings includes a ring-like portion, the ring-like portion comprising a flat wire which is wound in a plurality of turns formed in an overlapping direction of the flat wire and the plurality of windings and the plurality of cores are arranged along the overlapping direction of the flat wire of each ring-like portion.

In the grounds of rejection, the Examiner alleges that Grandmont discloses the transformer of claim 1 “except for the specific structure/arrangement of the windings.” See Office Action at page 3. However, Applicant notes that Grandmont teaches a “high power planar transformer” having a planar winding assembly which may include first, second and third winding assemblies, wherein each winding includes a metal strip conductor that is wound about the axis of its winding and is sealed between a pair of laminated insulative sheet layers. See Grandmont at col. 1, lines 11-20 and col. 3, lines 22-36. Further, Grandmont teaches that the winding assemblies are *stacked* and bonded together with an adhesive. See Grandmont at col. 6, lines 19-22.

In order to compensate for the deficiencies in Grandmont, the Examiner relies on Hsu. As alleged by the Examiner, Hsu teaches an “inductive device” (Figures 2a and 3c) comprising a core structure having a first core part (referencing core base 310) including a projected portion and a second core part (referencing core cover 320). In addition, the Examiner identifies first flat coil 100 and second flat coil 200 as the claimed plurality of windings which include ring-like

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portions, and further identifies the first upper surface 110 and second upper surface 210 of Hsu as the claimed end portions of the flat-type wire.

However, Applicant notes that Hsu teaches a “filtering inductive device” which is comprised of a core structure and first and second flat coils that *interlace* with each other. *See* Hsu at col. 1, lines 30-38. Thus, the windings of the coils in Hsu are interlaced such that the first coil acts as an inductor and the second coil, which is covered with an isolation or dielectric material and interlaced with windings of the first coil, acts as a capacitance. *See* Hsu at col. 1, lines 39-67. Accordingly, the interlaced structure of Hsu provides a “low-pass filtering induction device.” *See* Hsu at col. 3, lines 52-55. Further, the Examiner alleges that it would have been obvious to modify the planar high power transformer structure of Grandmont to incorporate the teachings of Hsu “for the purpose of reducing thickness of the device.” *See* Office Action at page 4.

Applicant respectfully disagrees with the Examiner’s asserted motivation to combine the teachings of Grandmont, which teaches a transformer in which windings are formed as traces on a flat board, with the unrelated teaching of Grandmont, which teaches a low-pass filter. Initially, Applicant notes that the filtering induction device of Hsu includes only one connector (see Fig 3C) in the second flat coil 200 because it is a filtering induction device, and not a transformer. Transformers, by contrast, would have at least two connectors in each coil.

Moreover, the Examiner’s motivation for combining the teaching of a low-pass filter structure with the flat transformer configuration of Grandmont finds no support in the objective teachings of Hsu. Indeed, Hsu does not suggest that the use of coils formed of overlapping flat

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wire would provide any thickness reduction compared to the planar winding structure of Grandmont. To the contrary, overlapping windings would require additional space compared to a flat configuration, particularly in the high power transformer application taught by Grandmont.

Thus, the alleged benefit relied upon by the Examiner to combine the teachings is merely the Examiner's conclusory opinion which is unsupported by the objective teaching of the prior art. In addition, the teachings of Hsu regarding "interlaced" windings of the flat wire to provide a *low pass filter* would render the high power transformer of Grandmont unsuitable for its intended purpose. Accordingly, the combination of Grandmont and Hsu is clearly based on impermissible hindsight reasoning supplied by the Examiner to support an improper combination of unrelated teachings.

As demonstrated by the foregoing, the rejection of claim 1 is improper because the Examiner has failed to establish *prima facie* obviousness. Reconsideration and withdrawal of the rejection of claim 1 is therefore requested. Further, Applicant submits that the above arguments are likewise applicable to independent claim 7, and the rejection is believed to be improper for similar reasons. Further, claims 2-4 and 8 are believed to be allowable at least by virtue of depending from claims 1 and 7, respectively. Therefore, allowance of claims 1-4 and 7-8 is respectfully requested.

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Claim Rejections - 35 U.S.C. § 102(b)

As noted above, claim 5 is presently amended to incorporate the subject matter of claim 6. Thus, claim 6 recites the feature of "wherein said windings are flat wire sections which are wound in a plurality of turns formed in an overlapping direction of the flat wire."

With respect to the rejection based on Yamashita, Applicant submits that the transformer of Yamashita, as shown in Figures 1-10, fails to disclose *at least* the feature of the windings are flat wire sections which are wound in a plurality of turns formed in an overlapping direction of the flat wire. Accordingly, Applicant submits that Yamashita fails to anticipate all the limitations of claim 5.

Turning to the rejection of claim 5 based on Grandmont, Applicant notes that the Examiner conceded that the features of previous claim 6, which are presently incorporated in claim 5, are not disclosed by Grandmont. Rather, in the Office Action, the Examiner relied upon the teaching of Hsu to compensate for this deficiency. Accordingly, Applicant submits that the above arguments with respect to claims 1 and 7 are similarly applicable to claim 5. Thus, claim 5 is believed to be allowable at least because the Examiner's asserted motivation to combine the teachings of Grandmont and Hsu is improper and the Examiner has failed to establish *prima facie* obviousness with respect to the combination of features recited by claim 5.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the

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Examiner feels may be best resolved through a personal or telephone interview, the Examiner is
kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue
Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any
overpayments to said Deposit Account.

Respectfully submitted,



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